

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-30 (canceled)

Claim 31 (new): A method to screen for drugs which are useful in treating a person with a mutation in HERG, wherein said mutation is one which results in a cysteine at amino acid residue 572, an aspartic acid at amino acid residue 588, a valine at amino acid residue 614, an alanine at amino acid residue 630, or a mutation shown in Table 7, said method comprising:

- a) placing a first set of cells expressing HERG with a mutation, wherein said mutation is a cysteine at amino acid residue 572, an aspartic acid at amino acid residue 588, a valine at amino acid residue 614, an alanine at amino acid residue 630, or a mutation shown in Table 7, into a bathing solution to measure a first induced K⁺ current;
- b) measuring said first induced K⁺ current;
- c) placing a second set of cells expressing wild-type HERG into a bathing solution to measure a second induced K⁺ current;
- d) measuring said second induced K⁺ current;
- e) adding a drug to the bathing solution of step (a);
- f) measuring a third induced K⁺ current of cells in step (e); and
- g) determining whether the third induced K⁺ current is more similar to the second induced K⁺ current than is the first induced K⁺ current, wherein drugs resulting in a third induced K⁺ current which is closer to the second induced K⁺ current than is the first induced K⁺ current are useful in treating said persons.

32. (new) The method of claims 22 wherein cells of said first set of cells are transfected with a mutant HERG wherein said mutant HERG encodes a HERG protein with a cysteine at amino acid residue 572, an aspartic acid at amino acid residue 588, a valine at amino acid residue 614,

an alanine at amino acid residue 630, or a mutation shown in Table 7.

33. (new) The method of claim 22 wherein cells of said second set of cells are transfected with nucleic acid encoding wild-type HERG.

34. (new) The method of claim 22 wherein said first set of cells or said second set of cells is obtained from a transgenic animal.